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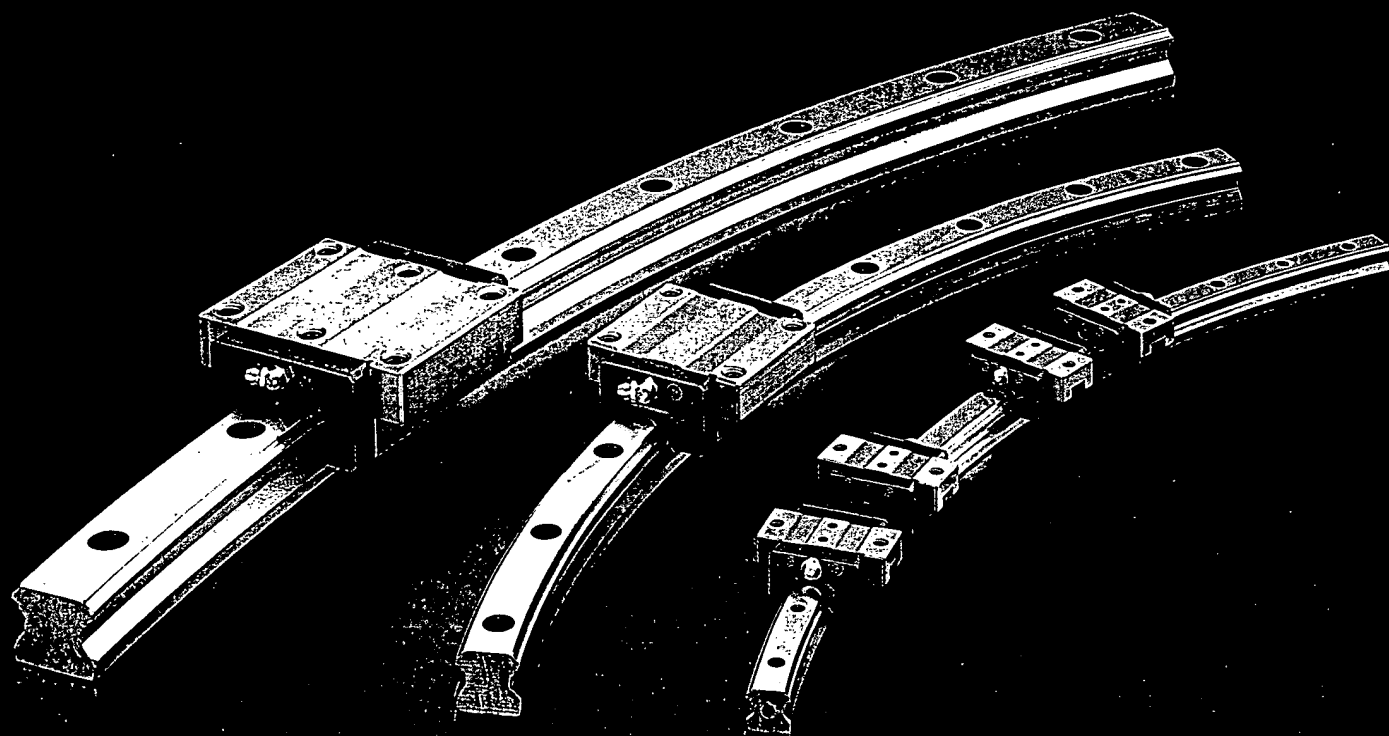
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# THK LM SYSTEM

Patent pending

**NEW**

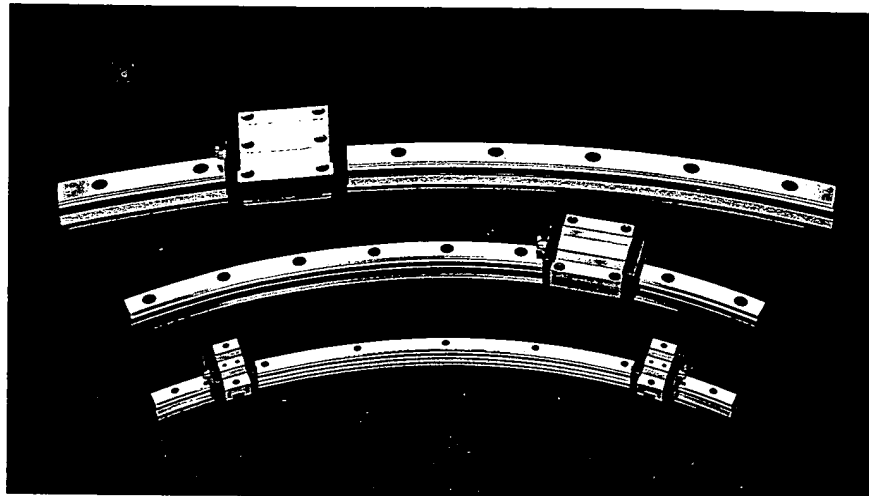
## Economical Circular Guide R Guide Type HCR



**THK CO., LTD.**  
TOKYO, JAPAN

CATALOG No. 154-2E

# THK R Guide Type HCR



※ Specifications are subject to change without notice.

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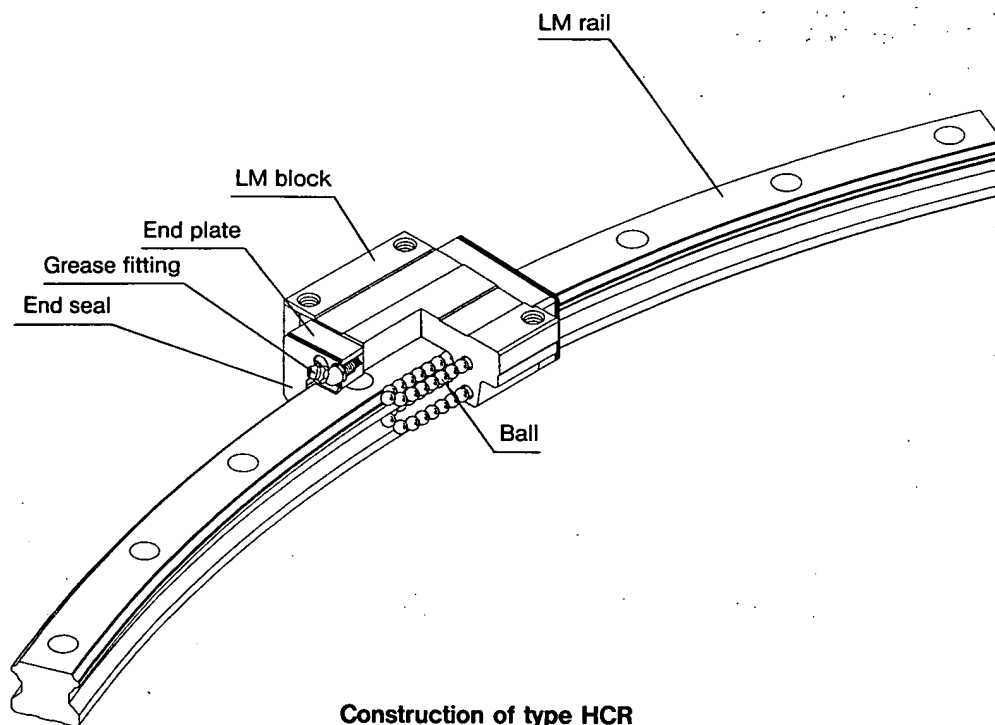
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# THK R Guide Type HCR

## 1. Construction

Based on "sophisticated THK" technology, an unprecedented R Guide type HCR that guides in circular motion has been developed. The series of "new concept" R Guides type HCR is based on the service-proven LM Guide type HSR that is capable of supporting equal, four-directional loads.



Construction of type HCR

## 2. Features

### Free Design

Unlike rolling bearings or cross roller rings, more than one block can be installed and controlled independently.

Laying out an LM block at the point of loading ensures effective design.

### Reduced Assembly Time

Unlike sliding guides or circular motion devices using cam followers, the type HCR achieves accurate circular motion without any clearance. The LM rail and LM block are simply assembled with bolts.

### Simple Construction

The type HCR structure is basically the same as that of the LM Guide. The compact, low profile type HCR supports a load from any direction.

### Low Cost Circular Guide

Larger the diameter of type HCR, lower the cost. Circular motion greater than 5 m in diameter can easily be achieved, which is impossible with rotating bearings. A large equipment that uses type HCR can easily be assembled, dismantled or re-assembled.

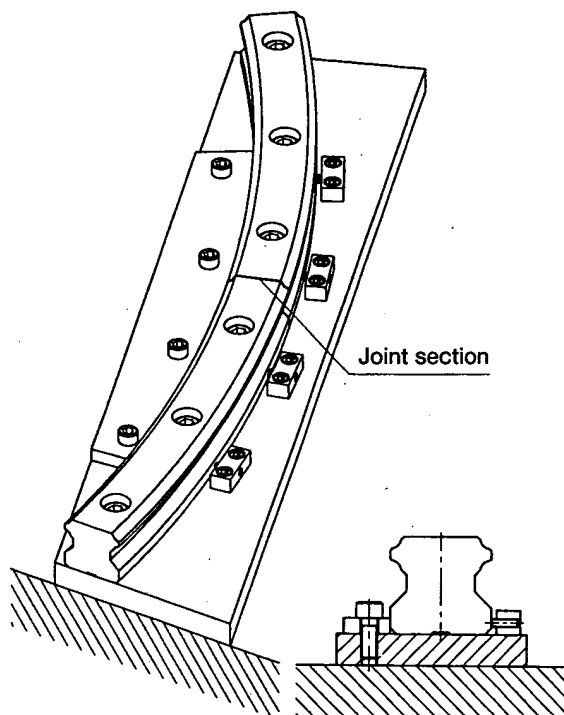
### Principal Applications

The type HCR is ideal for use in optical measurement devices, tool grinders, radiographic devices, CT scanners, medical equipment such as clinic beds, theatrical stage devices, vertical parking devices, amusement machines, tool changers, turntables, large-diameter turrets, pendulum rail cars, pantograph collectors, dampers, and other devices.

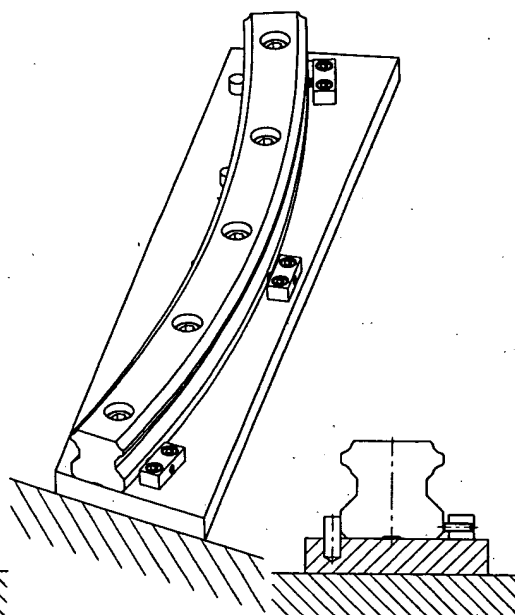
## Mounting LM Rails

The recommended installation is as follows. Set the reference surface (inner diameter) of the LM rails against the reference stoppers or reference pins. Use retainer blocks on

the other side of the LM rails to push the non-reference surface (outside diameter) of the LM rails against the reference stoppers or stopper pins.



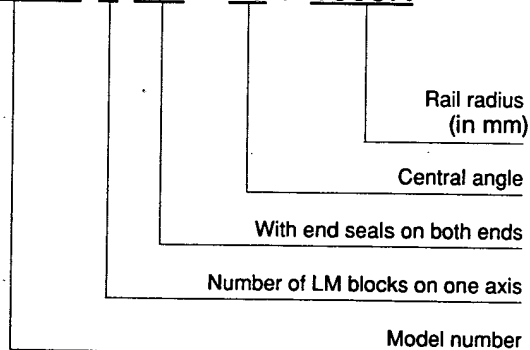
Rail installation at joint section



Rail installation using reference pins

## Composition of Code Number

**HCR25A 2 UU + 60 / 1000R**



- Notes 1. Rail radii not listed in the dimension table are also produced. Please consult THK.
2. The central angles listed in the dimension table are maximum for a single rail. Two or more LM rails are to be connected for larger central angles. Please consult THK.

## Symbols of Contamination Protection Devices

Specify the contamination protection devices required for the intended application using the symbols listed in the table below.

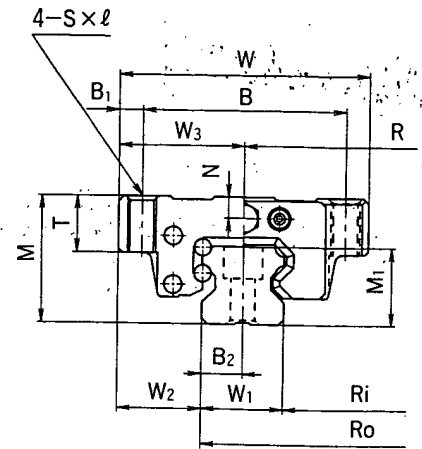
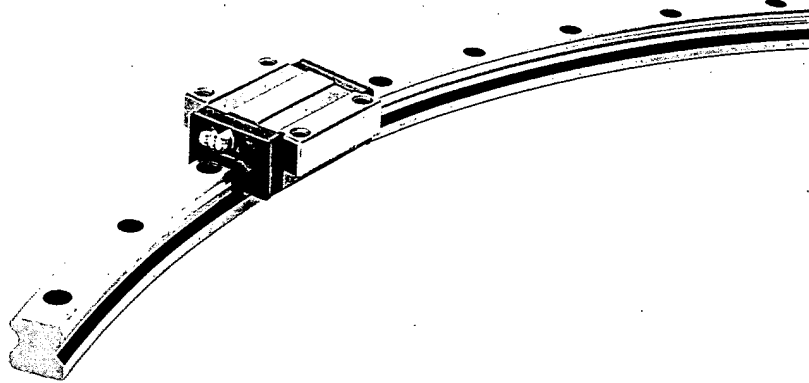
### Standard

Contamination protection devices	Symbol
With end seals on both ends (Single rail)	UU
With end seals on both ends (Jointed rail)	LL

### Option(Please consult THK )

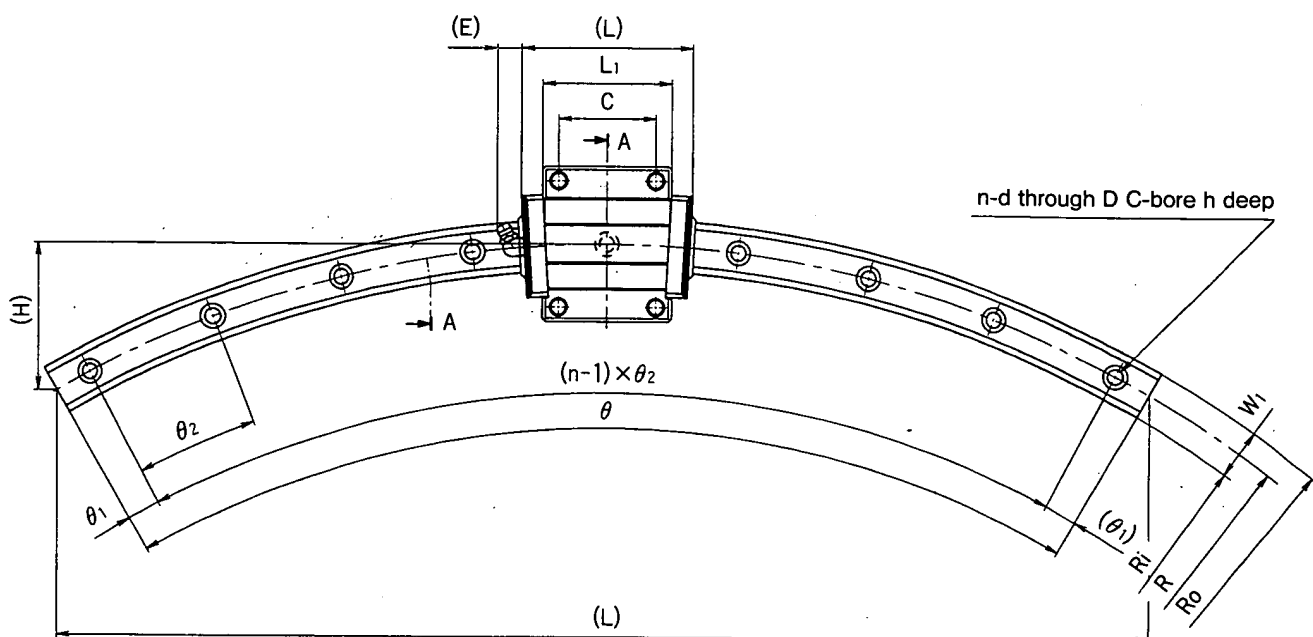
Contamination protection devices	Symbol
With end seals and side seals (Single rail)	SS
With end seals and side seals (Jointed rail)	RR
With end seals, side seals and scrapers	ZZ
With double seals and side seals	DD
With double seals and side seals and scraper	KK

# THK R Guide Type HCR



Section A-A

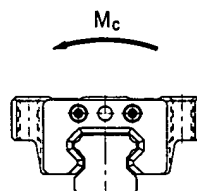
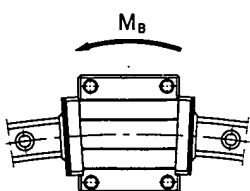
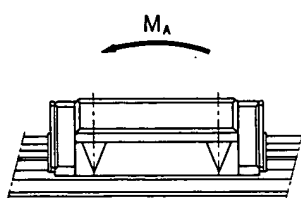
Model	LM Block												Grease fitting	R	Ro
	W	B	B <sub>1</sub>	L	C	M	S × ℓ	T	L <sub>1</sub>	N	E				
HCR12A+60/100R	39	32	3.5	44.6	18	18	M4 × 5	5	30.5	3.4	3.5	Drive in fitting	100	106	
HCR15A+60/150R	47	38	4.5	56.5	24	24	M5 × 10	11	38.8	4.5	5.5		150	157.5	
HCR15A+60/300R				53.5	28		M5 × 11						300	307.5	
HCR15A+60/400R													400	407.5	
HCR25A+60/500R	70	57	6.5	79.0	45	36	M8 × 16	16	59.5	6.0	12.0	B-M6F	500	511.5	
HCR25A+60/750R													750	761.5	
HCR25A+60/1000R													1000	1011.5	
HCR35A+60/600R	100	82	9.0	105.4	58	48	M10 × 21	21	80.4	8.0	12.0	B-M6F	600	617.0	
HCR35A+60/800R													800	817.0	
HCR35A+60/1000R													1000	1017.0	
HCR35A+60/1300R													1300	1317.0	
HCR45A+60/800R	120	100	10.0	139.0	70	60	M12 × 25	25	98.0	10.0	16.0	B-PT1/8	800	822.5	
HCR45A+60/1000R													1000	1022.5	
HCR45A+60/1200R													1200	1222.5	
HCR45A+60/1600R													1600	1622.5	
HCR65A+60/1000R	170	142	14.0	198.0	106	90	M16 × 37	37	147.0	19.0	16.0	B-PT1/8	1000	1031.5	
HCR65A+60/1500R													1500	1531.5	
HCR65A+45/2000R													2000	2031.5	
HCR65A+45/2500R													2500	2531.5	
HCR65A+30/3000R													3000	3031.5	



(Unit: mm)

LM Rail												Basic Load Rating		Static Permissible Moment		Note)
Ri	L	H	W <sub>1</sub>	W <sub>2</sub>	B <sub>2</sub>	M <sub>1</sub>	d × D × h	n	θ	θ <sub>1</sub>	θ <sub>2</sub>	C kN	C <sub>0</sub> kN	M <sub>A</sub> kN-m	M <sub>B</sub> kN-m	M <sub>C</sub> kN-m
94.0	100	13.4	12	13.5	6.0	11	3.5 × 6 × 5	3	60°	7°	23°	4.7	8.53	0.03	0.03	0.05
142.5	150	20.1	15	16.0	7.5	15	4.5 × 7.5 × 5.3	3	60°	7°	23°	6.66	10.8	0.07	0.07	0.10
292.5	300	40						5	60°	6°	12°	8.33	13.5	0.07	0.07	0.10
392.5	400	54						7	60°	3°	9°					
488.5	500	67	23	23.5	11.5	22	7 × 11 × 9	9	60°	2°	7°	19.9	34.4	0.27	0.27	0.4
738.5	750	100						12	60°	2.5°	5°					
988.5	1000	134						15	60°	2°	4°					
583.0	600	80	34	33.0	17.0	29	9 × 14 × 12	7	60°	3°	9°	37.3	61.1	0.64	0.64	1.0
783.0	800	107						11	60°	2.5°	5.5°					
983.0	1000	134						12	60°	2.5°	5°					
1283.0	1300	174						17	60°	2°	3.5°					
777.5	800	107	45	37.5	22.5	38	14 × 20 × 17	8	60°	2°	8°	60.0	95.6	1.3	1.3	2.1
977.5	1000	134						10	60°	3°	6°					
1177.5	1200	161						12	60°	2.5°	5°					
1577.5	1600	214						15	60°	2°	4°					
968.5	1000	134	63	53.5	31.5	53	18 × 26 × 22	8	60°	2°	8°	141	215	4.2	4.2	6.6
1468.5	1500	201						10	60°	3°	6°					
1968.5	1531	152						12	45°	0.5°	4°					
2468.5	1913	190						13	45°	1.5°	3.5°					
2968.5	1553	102						10	30°	1.5°	3°					

Note: Moment rating MA, MB or MC is for one block.

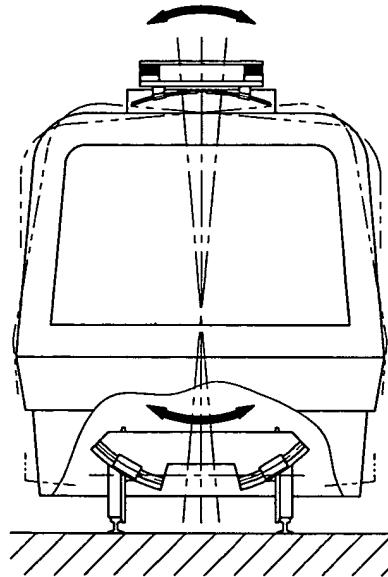


Unit: 1kN ≒ 102 kgf

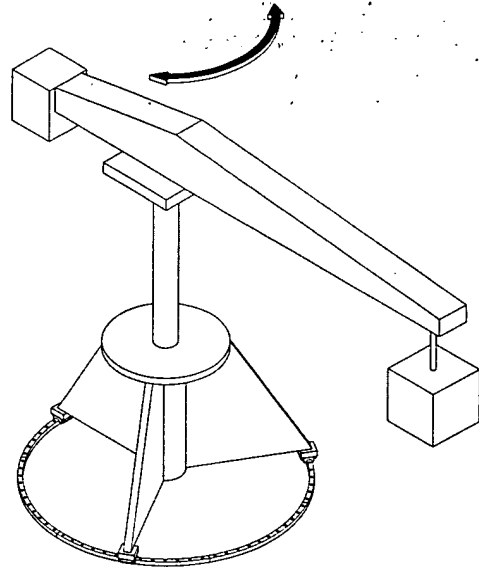
Unit: 1kN-m ≒ 102 kgf-m

## Application Example

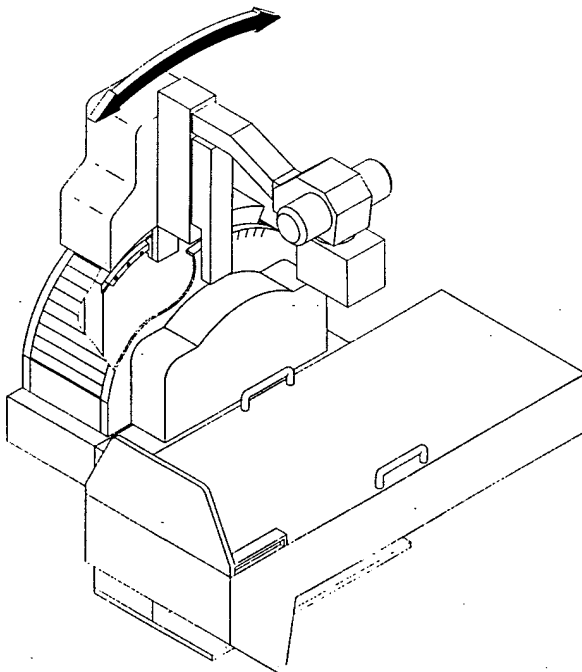
Railroad Carriage  
(Suspension and Pantograph)



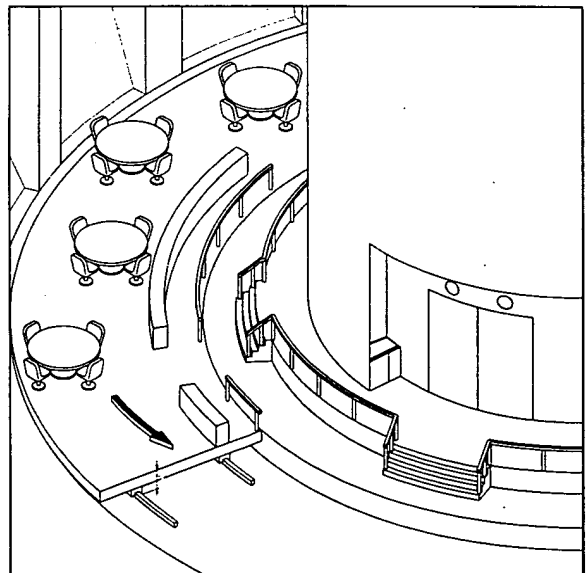
Rotary Crane



Medical Equipment



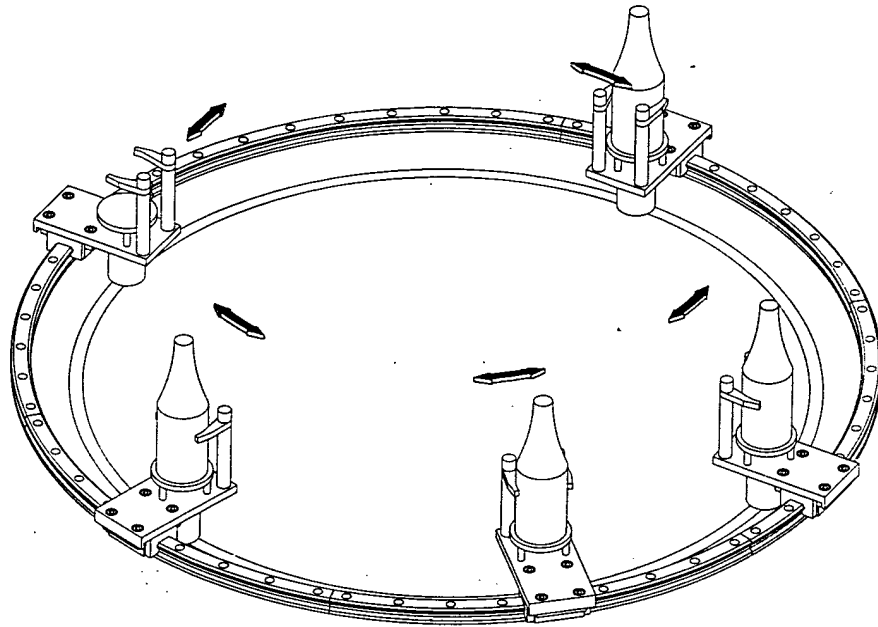
Rotary Observatory  
(Installed on the top of building)





## Application Example

Rotary Inspection Equipment



Rotary Table for Automobile

